PDR RID Report

Date Last Modified 6/8/95
Originator Donald Collins/Gail McConaughy **Phone No** 818-354-3473
Organization JPL DAAC Manager
E Mail Address djc@seaanchor.jpl.nasa.gov
Document

RID ID PDR 157
Review CSMS
Originator Ref
Priority 1

Section **Page** **Figure** **Table**

Category Name System-level **Actionee** HAIS
Sub Category Subsetting vs Network Cost
Subject Subsetting vs. network cost

Description of Problem or Suggestion:

What is the tradeoff between subsetting to reduce network costs versus the increased cost of subset processing at the DAACs?

Originator's Recommendation

GSFC Response by: **GSFC Response Date**

HAIS Response by: Forman **HAIS Schedule** 2/24/95
HAIS R. E. Armstrong **HAIS Response Date** 5/18/95

A traffic analysis of the "tall pole" data dependencies contained in the AHWGP data, with potential reduction by subsetting, has been performed. The results of this analysis will be available June 15, 1995 in a technical paper titled " DAAC-to-DAAC Traffic Analysis". This analysis reflects a potential significant reduction of 64% of the GSFC to LaRC traffic, reducing the flow to 112 GB/day (Currently 310 GB/day) if the MODIS L1B data is subsetted at GSFC to provide only the coverage of the MISR swath prior to transfer to LaRC and the MODIS data for use by MOPITT is subsampled. The other significant inter-DAAC traffic flow, GSFC to EDC also has potential for significant reduction through use of a land/sea bit mask Through the use of this technique it is estimated that 70% reduction can be achieved reducing the GSFC to EDC flow to 112 GB/day (currently at 373 GB/day).
It is not envisioned there would be any significant increase in total processing required for the subsetting, since for the most part, the subsetting would need to be done at the receiving DAAC during the production steps if not performed at the sending DAAC. The DAAC allocation of processing might be slightly affected by the subsetting but the total processing should not increase significantly.
Further work in this area will require a coordinated effort between ESDIS, instrument teams and ECS.

To examine the impact of subsetting, we would first need to define the specific instrument-by-instrument subsetting and subsampling requirements; these are non-trivial for Level 1 and 2 data (i.e., data which are not yet placed on a regular grid). Definition of these requirements should be coordinated with the AHWG as noted in RID 159.

ECS would then be able to assess the need for any additional development effort (either by ECS or by the instrument teams) in support of pre-processing for each instrument, and the need for additional processor and/or storage capacity at each DAAC. Finally, these impacts would be traded against potential network bandwidth savings and associated costs.

Status **Closed** **Date Closed** **6/8/95** **Sponsor** **Daly**

****** **Attachment if any** ******
